OLANREWAJU KABIRAT OMOWUMI Epidemiology -communicable-disease CHO 300L PDF

1. Discuss communicable diseases under the following headings:

Definition

1. Communicable Diseases

Definition

Communicable diseases are illnesses caused by infectious agents (such as bacteria, viruses, fungi, or parasites) that can be transmitted from one person, animal, or object to another, either directly or indirectly.

Causative Agents

Communicable diseases are caused by pathogenic microorganisms including.

Bacteria – e.g., Mycobacterium tuberculosis (tuberculosis)

Viruses – e.g., HIV (AIDS), Influenza virus (flu)

Fungi – e.g., Candida albicans (candidiasis)

Parasites – e.g., Plasmodium species (malaria)

Modes of Transmission

1. Direct transmission – through person-to-person contact, e.g., touching, kissing, sexual contact.

2. Indirect transmission – via contaminated objects or surfaces.

3. Airborne transmission – through droplets or dust particles, e.g., tuberculosis.

4. Vector-borne transmission – through insects such as mosquitoes or flies.

5. Vehicle-borne transmission – via contaminated food, water, or blood.

Methods of Prevention and Control

Immunization and vaccination

Good personal hygiene (hand washing, safe food handling)

Vector control (e.g., mosquito nets, spraying)

Isolation and quarantine of infected individuals

Health education and community awareness

Proper sanitation and waste disposal

2. Endemic, Epidemic, and Pandemic

Endemic

A disease that is constantly present in a particular geographic area or population.
Example: Malaria is endemic in many parts of Africa.

Epidemic

A sudden increase in the number of disease cases above what is normally expected in a population.
Example: Cholera outbreak in a community after heavy rainfall.

Pandemic

An epidemic that spreads across countries or continents, affecting a large number of people.
Example: COVID-19 pandemic (2020).

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3. Incidence and Prevalence

Incidence

The number of new cases of a disease that occur in a specified population during a defined period of time.
Example: If 50 new cases of malaria occur in a town of 1,000 people in one year, the incidence is 50 per 1,000 per year.

Prevalence

The total number of existing cases (new and old) of a disease in a population at a given time.
Example: If 200 people in the same town currently have malaria, the prevalence is 200 per 1,000.

Importance in Epidemiology

Incidence helps to identify risk and rate of new infections (useful for studying causes).

Prevalence helps measure disease burden and plan healthcare resources.

4. Measures Used in Controlling Communicable Diseases at the Community Level

Health education: Promoting hygiene and awareness about disease prevention.

Immunization programs: Protecting individuals and communities through vaccines.

Environmental sanitation: Safe water supply, proper waste disposal, and clean surroundings.

Surveillance and reporting: Early detection and monitoring of outbreaks.

Isolation and quarantine: Preventing the spread from infected individuals.

Vector control: Eliminating breeding sites and using insecticides or repellents.

Provision of healthcare services: Early diagnosis and effective treatment.

5. Short Notes

a. Epidemiological Triangle

A model used to explain how diseases occur and spread. It consists of three components:

Agent: The microorganism that causes the disease.

Host: The organism (human or animal) that harbors the disease.

Environment: External factors that allow disease transmission (e.g., climate, sanitation).
👉 The interaction among these three determines disease occurrence.

b. Vehicle-Borne Transmission

This occurs when an infectious agent is transmitted through a contaminated inanimate object or material (vehicle), such as:

Contaminated food, water, or milk

Blood transfusion

Medical instruments (needles, syringes)
Example: Cholera transmitted through contaminated water.

**c. Point PrevalencSure 😊 Here's a well-organized and clear answer set for your Epidemiology and Communicable Diseases Assignment — suitable for submission or study notes:

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**c. Point Prevalence and Period

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1. Point Prevalence and Period

The proportion of individual with a disease at a specific point in time

2. Period prevalence
The proportion of individual which have had the diseases at any time during a specified period (e g a month or a year)

Includes both existing and new cases within that time frame

Examples:this number of people who had malaria at any time during the year 2024